



# The Environmental Quarterly

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July 2006

## LETTER FROM THE EDITOR

Dear Environmental Colleague,

I was pleased to have the opportunity to interact with many of you during the recent National Environmental Conference in Arlington, VA.

A lot of good information was shared – information that we look forward to bringing to the environmental community as a whole. This issue is a bit sad, as it marks the retirement of one of our own – Jerry Barkdoll. Good luck and congratulations, Jerry. We wish you all the best.

Sincerely, **Don Cote**  
Environment Technical Service  
Team (TST) Leader &  
Editor-in-Chief  
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## FHWA co-sponsors Archeological Geophysical Workshop

By Dave Grachen



*Dr. Lew Somers leads a discussion of geophysical techniques during field investigations.*

The 17<sup>th</sup> annual National Park System archeological geophysical workshop was held on May 15-19, 2006 at Fort Frederica National Monument on St. Simons Island, Georgia.

Each year, world leaders in geophysical applications for archaeology converge at this event to share new technologies and techniques with class participants that can enhance the effectiveness of archeological investigations. This year's workshop, organized by Steven DeVore of the NPS Midwest Archeological Center, focused on non-destructive methods for archeological prospection. The workshop included

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*Conference attendees gathered for a group photo at Fort Frederica National Monument*

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expert instructors from the fields of archaeology and geophysics, instrument manufacturers, and class participants from diverse backgrounds including federal and state government agencies, contract archaeologists, and academia. The FHWA was a key sponsor of the event, with the Resource Center Environmental Technical Service Team (TST) contributing \$10,000 of technical assistance funds to help pay for instructor travel costs.

The week-long workshop consisted of morning lectures by

the top geophysical archaeologists in the world. Afternoons were spent doing field investigations at Fort Frederica National Monument, where students were able to gain first-hand experience with a multitude of different geophysical instruments. Geophysical techniques exhibited included ground penetrating radar, electrical resistivity, electromagnetic conductivity, magnetics, metal detection, and aerial photography. Each evening focused on post-processing of data and the presentation of results collected in the field that

afternoon.

The Georgia Department of Transportation (GDOT) worked closely with the Resource Center Environmental TST to help sponsor this year's workshop and participated in the workshop as instructors. The GDOT's Archaeology Unit has been utilizing geophysical techniques to enhance the study of archeological sites on transportation projects for over three years. GDOT staff archaeologists were in attendance, with their GPR unit, and provided students with instruction on field techniques and data processing. GDOT staff also made formal presentations highlighting how geophysics has enhanced their study of archeological sites and improved their environmental compliance and stewardship of cultural resources on transportation projects, as required by Section 106 of the National Historic Preservation Act.

For more information, contact David Grachen at 404-562-3668.

## **Announcement: 2007 FHWA Environmental Excellence Awards Call for Entries**

The 2007 FHWA Environmental Excellence Awards program is accepting entry forms through August 15. These awards were established by FHWA to recognize our outstanding processes, projects and people who go beyond what is required with traditional transportation projects and who promote environmental stewardship along with partnerships to achieve environmentally sound transportation solutions. The application forms can be reached on-line at: <http://www.fhwa.dot.gov/environment/eea.htm>

Nominations are being accepted in the following areas:

- Air Quality Improvement
- Cultural and Historical Resources
- Ecosystems, Habitat, and Wildlife
- Environmental Leadership
- Environmental Research
- Environmental Streamlining
- Wetlands, Watersheds and Water Quality
- Livable/Sustainable Communities
- Non-motorized Transportation
- Recycling and Reuse
- Roadside Resource Management and Maintenance
- Scenic Byways

For more information, please contact Patricia Cazenias at 202-366-4085 or [patricia.cazenias@dot.gov](mailto:patricia.cazenias@dot.gov). Award plaques will be presented to the winners at the International Conference on Ecology and Transportation (ICOET) in Little Rock, Arkansas, May 20-25, 2007.

# Mark Your Calendars!

## The 2007 International Conference on Ecology and Transportation (ICOET) will be held in beautiful Little Rock, Arkansas!

On May 20-25, 2007, the Arkansas State Highway and Transportation Department will welcome the International Conference on Ecology and Transportation (ICOET) to beautiful and dynamic Little Rock, Arkansas.

ICOET has been held every two years since 2001. The objective of ICOET is to gather professionals from around the world to identify and share quality research applications and best management practices that address wildlife, habitat, and ecosystem issues related to the delivery of surface transportation systems. ICOET is the primary forum for an international gathering of the foremost experts in the field of transportation development, related scientific study, and administrative processes that can enhance both the project development process and the ecological sustainability of transportation systems. The theme of the 2007 conference is "Bridging the Gaps Naturally."

According to Randal Looney of the FHWA Arkansas Division Office, "The Arkansas Division Office welcomes ICOET to the Natural State in 2007. We are excited about the conference and take pride in being able to showcase our work in



*Photo of US Scenic Highway 62, Marion Baxter County, AR*

transportation-related research and conservation efforts. Arkansas offers many opportunities for ecologically-based activities, and we hope that ICOET participants take full advantage of those opportunities during their visit."

The Federal Highway Administration is an official sponsor of ICOET, along with the U.S. Forest Service, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency Wetlands Division, state departments of transportation, universities, and non-governmental organizations. The Center for Transportation and the Environment at North Carolina State University is an official sponsor and lead organizer of

ICOET. The 2005 ICOET conference was hosted by Caltrans and the University of California at Davis, Road Ecology Center. The 2005 conference drew more than 390 attendees, including 40 students interested in careers in transportation and ecology.

The State of Arkansas is renowned for its natural beauty, and this gem of the South is especially spectacular in spring. The City of Little Rock is the capital of Arkansas, and is a dynamic business and cultural center. The Peabody Hotel will host the conference. The hotel is located in downtown Little Rock near many historic and

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cultural attractions, including the Old Statehouse Museum, the William Jefferson Clinton Presidential Center, the Museum of Discovery and Arkansas Arts Center. Little Rock's legendary and diverse cuisine, including classic barbeque, Southern comfort food and international favorites, was recently featured on the Food Network show, "Rachael Ray's Tasty Travels."

The Little Rock National Airport is located just 6.7 miles (10.8 kilometers) from the hotel. Nine airlines provide daily non-stop jet service to major international airports

throughout the U.S.

Abstracts for technical presentations and posters for the 2007 ICOET are due on September 30, 2006. For information about the conference, presenter's guidelines and submittal of abstracts, please see the conference website at [www.icoet.net](http://www.icoet.net) and click on ICOET 2007.

### **Make Plans to attend the 5<sup>th</sup> Annual Community Impact Assessment (CIA) Workshop**

Come visit sunny, scenic Colorado this July 31 - August 3 for the 5th National CIA workshop! Registration is now open.

Registration materials, a draft agenda and hotel information are available at <http://www.dot.state.co.us/environmental/Workshop/CIAworkshop.asp>. Registration is \$200.

For more information, contact:

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### **Environmental Trivia: Did you know?**

The altitude in Colorado increases the effect of automobile emissions by up to 200%.

Even sports can be affected by the high altitude and thinner air. At 5,000 feet, each breath only takes in about 80% of the oxygen that it does at sea level. This causes the heart rate to increase in an attempt to compensate, resulting in fatigue for those whose bodies are not yet accustomed to the surroundings (a process that normally takes about ten days).

Baseballs travel further, a fact easily proven by examination of the collective ERA of pitchers on the staff of the Colorado Rockies. Football kicks can travel a few yards further as well. On October 25,



1998, Broncos kicker Jason Elam tied the NFL record with a 63-yard field goal in the friendly confines of Denver's Mile High Stadium.

What takes many fans by surprise is the city with pro sports teams that appears second on the list of altitude. It's Atlanta, Georgia - in the foothills at the base of the Appalachians - at 1,050 feet.

*Reprinted with permission.  
Source: **Mental\_Floss.com***



*K Lynn Berry, FHWA Community Impact Specialist, speaks to the group during a session on Public Involvement.*



*Administrator Capka, Cindy Burbank, Bob Mahoney (LA-DO) and Bill O'Donnell (NH-DO) slice into a cake in celebration of the 50<sup>th</sup> Anniversary of the Interstate. Bill and Bob were also being honored for their 40+ years of service to FHWA.*



*Conference attendees listen intently to a presentation.*

# FHWA National Environmental Conference

FHWA Resource Center Environmental Technical Service s Team was busy meeting and greeting Environmental professionals from the Division Offices across the country as they gathered for the biennial FHWA National Environmental Conference. Held this year in Arlington, VA, approximately 200 participants attended the gathering.

Just *some* of the highlights of the information packed event were:

- Fred Skaer's presentation on highway trivia.
- The breakout session on Noise, which featured a demonstration of ISIS, a software program that simulates various noise scenarios.
- A session on surviving NEPA litigation.
- Bonnie-Harper Lore's presentation on invasive threats to wetland banks.

If you'd like to obtain materials from some of these presentations as well as see the proceedings and view the full agenda, visit

[http://www.environment.fhwa.dot.gov/conference/conference\\_2006.asp](http://www.environment.fhwa.dot.gov/conference/conference_2006.asp).



*Paul Tufts, FHWA Environmental Program Specialist, greets conference attendees while they visit the Resource Center table.*



*Mary Ann Rondinella, FHWA Environmental Program Specialist, moderates session on Noise.*



*The FHWA Resource Center exhibit showcases the services available to customers.*

# Invasive Species

## Focus:

# Snakeheads

By Marie C. Roybal



\$100 billion. That is the price tag on the environmental damage caused by invasive species in the U.S. each year.

Dan W. Johnson, Environmental Program Manager from the Maryland FHWA Division Office suggested that invasive species are an unintended consequence of one of the greatest roadway networks in

the world – one that aids in the delivery of exotic plants and animals to new environments, whether by accident or by design.

Some of the troublesome exotic species discovered in the U.S. include: Kudzu (*Pueraria montana* var. *lobata*), zebra mussels (*Dreissena polymorpha*), and gypsy moth caterpillars

(*Lymantria dispar*).

But in recent years, the American media has had a field day with another invasive species: the snakehead fish. Dubbing it the “Frankenfish” because of its unusual nature, its reputation as a danger to the environment quickly grew.

### Maryland uncovers an alien...

In spring 2002, in Crofton, Maryland, an unusual fish was discovered in a small pond. The fish was identified as a northern snakehead. Normally a native of Southeastern Asia, the fish had never been seen the wild in the U.S. Later that summer, more snakeheads were found in the same body of water. The Maryland Department of Natural Resources had fears that the alien species might breed and cause damage to the local ecosystem.

Maryland officials knew the damage that an alien species could cause – having dealt with Nutria for many years. Nutria (*Myocastor coypus*) are large non-native rodents that have established themselves in the Chesapeake Bay and

*Continued on page 7.*

### Frankenfish Facts:

- **Snakeheads pose a high risk to endangered species.** According to the U.S. Fish & Wildlife Service, of all endangered species in US aquatic habitats, 16 amphibians, 115 fishes, and five of the 21 federally protected crustaceans could be negatively impacted by the introduction of snakeheads into their habitats.
- The northern snakehead, a species found live in fish markets in New York and Boston, can spawn up to five times each year.
- According to the Maryland Department of Natural Resources, once the fish takes up residence in a body of water, getting rid of them may prove impossible.
- Most species of Snakeheads are from Southeastern Asia.
- There are 28 known species of snakeheads.
- Snakeheads can grow to over 3 feet long.
- Some Asian cultures consider snakeheads to have medicinal properties reported to be good for healing bodily wounds.
- They often kill more fish than they will eat – the only type of fish known to exhibit this behavior.
- At least two movies have been made featuring the fish: *Snakehead Terror* (2004) and *Swarm of the Snakehead* (2006).



*Snakeheads, continued from page 6.*

brought havoc upon the native muskrat population as well as to thousands of acres of fragile marshland vegetation.

After Maryland's Snakehead Fish Scientific Advisory Panel finished studying the issue, a decision was made to eradicate the fish with poison. The MD Division Office's Dan W. Johnson noted that, "The irony of this story was that all the early concern was about the fish in the Crofton pond and the possibility that they would escape to streams leading to the Chesapeake Bay. It was almost anticlimactic when, several months after poisoning everything in the pond to remove that threat, it was discovered that the snakeheads were already in the Potomac River, with open water access to the Chesapeake."

Snakeheads have also been found in Maine, Massachusetts and Rhode Island. Environmentalists are keeping close watch on these snakehead populations. In non-native environments, with no natural predators, their populations could increase rapidly and the fish could compete for food with native species. This would potentially disrupt the sensitive

bionetwork of aquatic systems. They take each discovery of the fish on a case by case basis –thoughtfully deciding between controlling and monitoring the population or eradication.

### **Meet the Snakeheads**

The name conjures up a dreaded beast...a walking, breathing fish that creeps over land from pond to lake, devouring everything in its path –other fish, small mammals, frogs, worms, insects and birds. Not averse to taking a bite of human flesh, they are distressing, to say the least. According to the U.S. Fish and Wildlife Service (FWS), part of its ferocious image is well deserved, but some of it may have been overblown in the media.

Southeastern Asia is home to the great majority of the 28 known snakehead species. A few are also native to Africa. Snakeheads can be classified into two genera: *Channa* (snakeheads of Asia, Malaysia and Indonesia), and *Parachanna* (African snakeheads).

### **Just breathe...**

Snakeheads have evolved the ability to breathe air. In fact, they will die if they do not have access to air. Because they are air-breathers, they can survive in bodies of water that have very low oxygen levels.

Part of the snakehead's disquieting reputation comes from their ability to use their breathing talents to live on land for up to three days. But, reassuringly, this is only true of

they can manage to keep their skin moist.

### **Eat or be eaten...**

Their mild, white meat is considered a delicacy. They are especially valued by cooks because it is easy to obtain supremely fresh fish for cooking; since they breathe air, they can be shipped live.

In Asia, during drought season, snakeheads bury themselves in the mud to keep their skin moist...where they are promptly caught by intrepid fishermen and turned into soup.

But smart fish-farm workers wear helmets and protective gear while harvesting the snakeheads. Its aggressive reputation is bolstered by stories like the near castration of one man and other close calls.

*Continued on page 8.*



*Snakeheads. continued from page 7.*

### **M. Night Shyamalan is on line one...**

What about snakeheads has made them a great subject for horror flicks and the focus of a media firestorm?

Well, to begin with, they could potentially be almost anywhere. According to FWS, any U.S. fresh or brackish body of water could become home to some species of snakehead.

And who wouldn't get chills up his spine upon hearing that the fish can travel on land? Some species of snakeheads are ambulatory – potentially able to migrate from one body of water to another. The species that possess this faculty move by propelling themselves forward using their fins and by wriggling their bodies.

Scientists do not know exactly how many species possess this disturbing talent. The northern snakehead species – the kind discovered in Maryland - does not have this ability.

While upsetting to us, ambulation probably evolved to help the fish survive in its native environment's extreme seasonal conditions. Ambulation allowed the fish to move from one body of water to another in search of food or better conditions.

Oh, and try not to turn your back on this fish. The giant snakehead *Channamicropeltes* – reputed to be the most predacious of the species – has attacked people. This

species has been discovered in bodies of water in Maine, Massachusetts and Rhode Island. Luckily, because of the relatively cold climate, these places are not conducive to breeding. But, if they found their way to Florida or Hawaii, the giant snakehead might be able to reproduce successfully.

### **My Snakehead is an Honor Student...**

You can say a lot of bad things about snakeheads, but you can't say that they are not attentive parents. In fact, when David Letterman made a Top Ten List of Little Known Facts about Snakeheads, number seven referred to their love of children.

Some snakehead species are mouth brooders - holding the eggs and later the young fish in their mouths until they are ready to be on their own. This

duty goes to the males of the species.

Parent snakeheads guard their young fiercely. One species (*C. micropeltes*) has reportedly attacked, and in some instances killed, humans who came too close to their young.

So now you know some of what makes the snakehead a truly amazing creature and wonderfully well suited to its native habitat. But, as an invasive species, they could be the stuff of nightmares.

The challenge now for many communities in which snakeheads have been found is to decide whether eradication (if that is even possible given a specific situation) or control is the best course of action.

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## Announcements for the Environmental Community:

### In Controlling Roadside Invasive Species

A training video to help road maintenance crews recognize and control invasive plants has been developed by the U.S. Forest Service in partnership with the Federal Highway Administration and other agencies.

The video, titled "Dangerous Travelers: Controlling Invasive Plants Along America's Roadways" outlines the best management practices that road crews should be following in their day-to-day operations, according to a fact sheet on the effort. Best practices include how to work with botany professionals for plant identification, developing inventory systems, mapping

infestations, mechanical removal, herbicide treatments, weed-free products, maintenance techniques to reduce risk of spreading weeds, and equipment cleaning.

"Targeting invasive species is one of the Forest Service's top priorities," the fact sheet said. "In the western United States alone, 17 million acres have been taken over by invasive species. And, the number of acres is growing. It is estimated that an additional 4,600 acres are taken over by noxious weeds every day," the document stated.

Road maintenance crews are the nation's "first responders," the fact sheet said, providing early detection and rapid response to new infestations of invasive plants that could be spread quickly along these highway corridors.

The video is the first in a new

series of videos on best management practices for invasive species prevention. It also will be part of a series of five videos that cover maintenance practices for unpaved roads titled "Forest Roads and the Environment."

The video was developed by the U.S. Department of Agriculture Forest Service's San Dimas Technology and Development Center in partnership with the National Forest System Invasive Species Program, Federal Highway Administration, U.S. Fish and Wildlife Service, and the Pennsylvania Department of Transportation.

It may be accessed on the invasive species program Web site, <http://www.fs.fed.us/invasivespecies> and by contacting: USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, Calif. 91773, (909) 599-1267.

[www.fhwa.dot.gov/environment/vegmgt/weedctrl.htm](http://www.fhwa.dot.gov/environment/vegmgt/weedctrl.htm)

## *New Frontiers Ahead for a Cherished Environmental Professional...*

Our best wishes go out to Jerry Barkdoll, Environmental Program Specialist for the Resource Center, who retired on May 31<sup>st</sup> after 29 years of service to the FHWA. She was an active contributor to this newsletter, as well as to historic preservation and community impact projects.



# What's Going On?

Here are a few of the upcoming events of interest to the environmental community:

## August 2006

July 31- Aug 3

### 5<sup>th</sup> National Community Impact Assessment Workshop

Denver, CO

[www.dot.state.co.us/environmental/Workshop/CIAworkshop.asp](http://www.dot.state.co.us/environmental/Workshop/CIAworkshop.asp)

Aug 15

### 2007 FHWA Environmental Excellence Awards entry forms due.

Contact: Patricia Cazenias at 202-366-4085 or

[patricia.cazenias@dot.gov](mailto:patricia.cazenias@dot.gov)

<http://www.fhwa.dot.gov/environment/eea.htm>

August 29-31

### CIA Workshop

Raleigh, North Carolina

## September 2006

Sept. 30

### ICOET 2007 abstracts for technical presentations and posters due.

[www.icoet.net](http://www.icoet.net)

## March 2007

Mar 17 - Mar 18

### National OHV Program Managers Workshop

Ontario, CA

Co-sponsored by: National Off-Highway Vehicle Conservation Council and FHWA's Recreational Trails Program

Contact: Bob Walker (406) 444-4584

Contact Donna Carter, [conference@naep.org](mailto:conference@naep.org)

## May 2007

May 13 - May 17

### Coastal Sediments 2007

New Orleans, LA

May 20 - May 25

### Int'l Conference on Ecology & Transportation (ICOET)

"Bridging the Gaps, Naturally"

Little Rock, AR

[www.icoet.net](http://www.icoet.net)



U.S. Department  
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***Due to Quarterly publication schedule, all article submissions for future issues are due to the Editor-In-Chief by the 15<sup>th</sup> of March, June, September, and/or December***

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